CLAIMS:

1. An electrophoretic display (101) comprising a drive unit (110), a drive circuitry, and at least one pixel cell (102) that is arranged with drive electrodes (103, 104) and that contains an electrophoretic media (105) that is responsive to an electric field applied between said drive electrodes (103, 104); wherein said drive unit (110) is arranged to provide said pixel cell (102) with a drive signal via said drive circuitry and is switchable between a monochrome drive scheme (501) and a grayscale drive scheme (502), said monochrome drive scheme (501) involving drive signals providing for only two extreme optical pixel states, and said grayscale drive scheme (502) involving drive signals providing for at least one additional, intermediate pixel state between said extreme states, and wherein said drive unit (110) furthermore is operative to apply a separate transition drive signal (504) when switching from said grayscale drive scheme (502) to said monochrome drive scheme (501), whereby said transition drive signal is arranged such that is counteracts the build-up of remnant DC voltage in the pixel cell.

2. An electrophoretic display (101) according to claim 1 and comprising a number of pixel cells (102) that are addressable in image frames, wherein the grayscale drive scheme (502) is employed for image frames that include at least one intermediate pixel state and the monochrome drive scheme (501) is employed for image frames that include extreme states only.

3. An electrophoretic display (101) according to claim 1, further comprising a memory unit wherein pre-defined drive signals corresponding to the respective drive schemes are stored accessible by the drive unit (110).

4. An electrophoretic display (101) according to claim 1, wherein said transition drive signal (504) drives the pixel cell (102) repeatedly between the two limit color states (602) so as to remove any remnant DC voltage in the pixel cell before the monochrome drive scheme is initiated.

5. An electrophoretic display (101) according to claim 1, wherein said transition drive signal (504) involves a drive signal corresponding to a signal in the grayscale drive scheme (502).

6. An electrophoretic display (101) according to claim 1, wherein the transition drive signal (504) is selected from a transition drive scheme that comprises more than one alternative transition drive signals.

7. An electrophoretic display (101) according to claim 1, wherein the transition drive signal (504) is applied when switching to said monochrome drive scheme (501) only when switching from a subset of the pixel states provided for by said grayscale drive scheme (502).

8. An electrophoretic display (101) according to claim 7, wherein said subset of pixel states excludes said extreme pixel states.

9. An electrophoretic display (101) according to claim 1, wherein said transition drive signal (504) involves a drive signal corresponding to a signal in the monochrome drive scheme (501) but modified with an additional remnant DC voltage reducing voltage pulse.

10. An electrophoretic display (101) according to claim 9, wherein said additional remnant DC voltage reducing voltage pulse is employed before said monochrome drive scheme (501) drive signal.

11. A method for driving an electrophoretic display, said method comprising the steps of:

- receiving image information regarding an image to be displayed;
- selecting (503, 505) a drive scheme from a monochrome updating drive scheme and a grayscale updating drive scheme, depending on the existence of grayscales in the image to be displayed;
- employing a transition signal (504) in case the drive scheme is changed from the grayscale drive scheme (502) to the monochrome drive scheme (501), said transition signal being such that any remnant DC voltage is reduced;

- employing a drive signal that is based on the selected drive scheme and that corresponds to said image to be displayed.